RLC ENTERPRISES, RACING DIVISION

Dash Logger User Manual – Micro Pod Lite

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Introduction

First and foremost, thank you for buying our products. You are a valued customer and R.L.C. looks forward to a mutually beneficial relationship with you. In order to help insure your success, we have prepared this getting started guide for you. Use this step-by-step Getting Started Guide/User Manual to get started for the first time and as a reference during the normal operation of your Race Logger system. This user manual has been written with the assumption that you have correctly installed the wiring harness, connected and added sensors, configured your car, and set certain user preferences. See the Race Logger Technical Manual for technical details and information about car configuration or sensor creation and calibration. The Micro Pod Lite and Micro Pod Sport units have a touch screen for navigation. Simply tap on the screen to make your selection or to get to another screen. We will cover how to get around the unit using only the touch screen in the section below. Generally you will not be using the mouse at the track to navigate. A mouse is not required to get around.

Note: The Micro Pod Extreme and Extreme DLD units do not have a touch screen; instead you use switches to navigate the unit. A mouse is not required to get around, please see Appendix A on the operation and description of the switches.

Booting Up

Once you have powered the unit, you should see a startup screen (Fig 1). This screen will display while the system is loading for a few seconds and then you will see the race screen (Fig 2). The race screen is the screen which you will normally use during races.

Figure 1 - Startup Screen

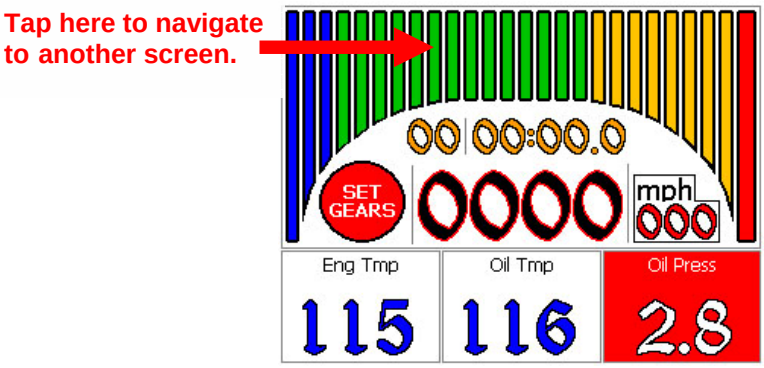

Figure 2 – Race Screen

Getting Around

Navigating through the different screens and sub-screens of the race logger systems is easy; simply use the touch screen on the Micro Pod to get around. You can also use the mouse that was included in your kit to navigate your way through your unit but you probably won't be using the mouse at the track. The user manual has been written to assume that you are at the track and do not have a mouse attached. To navigate to the different screens, tap the top portion of the screen, as indicated in Figure 2, and the next screen will appear. To navigate to the different

sub-screens, tap the bottom right portion of the screen, as indicated in Figure 4, and the next sub-screen will appear.

There are four main screens on the RLC race loggers; the race screen (Fig 2), the qualify screen (Fig 3), the sensor screen (Fig 4), and the main menu screen (Fig 5).

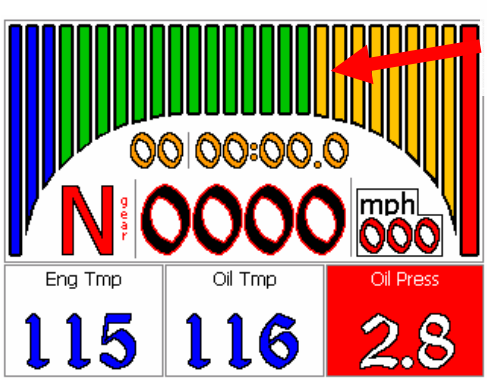

Figure 2 – Race Screen

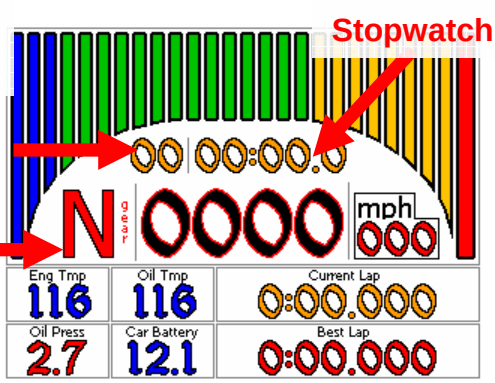

Figure 3 – Qualify Screen

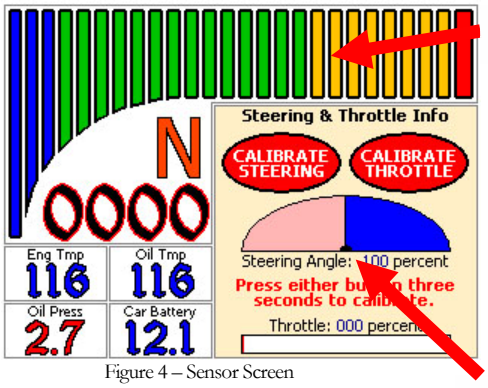

Figure 4 – Sensor Screen

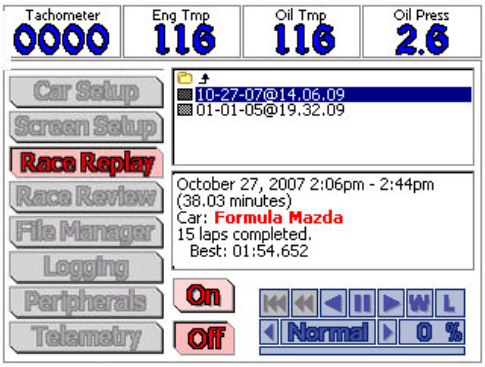

Figure 5 – Main Menu Screen

Racing Screens

There are three screens that a driver will use while the car is moving: the racing screen (Fig 2), the qualifying screen (Fig 3), and the sensor screen (Fig 4). Each screen is used for slightly different purposes. To navigate to the different screens tap on the top gauge bar, as indicated in Figure 2, on the Micro Pod unit. Tapping the tachometer bar will scroll through the screens. To get back to any screen, simply keep tapping on the gauge bar until the desired screen appears.

The racing screen (Fig 2) is the main screen used during an actual race. It consists of a large colorful tachometer, numerical value of the tachometer, selectable gauges for displaying engine vitals, current speed (mph), gear position, lap counter, and a stopwatch. If there is an alternate screen for the engine vitals, tap on the far right engine vital to display the alternate sensor.

The qualifying screen (Fig 3) is used during qualification or any time you want to keep an eye on your lap times. The qualification screen has everything the race screen has but adds current and best lap times to the bottom of the screen. Knowing your best lap throughout qualification is extremely useful because you don't have to wear

your tires out during qualify. You just stay out on the track as long as it takes to get a lap time you are satisfied with.

Sensor Screens

The sensor screen (Fig 4) shows a graphical representation of the sensor with a real-time update of the sensor's value. Tap on the sensor screen to toggle through the different sensor screens that are available (Fig 6-11). Some sensor screens will have easy to follow, on-screen instructions on how to calibrate that particular sensor, see the calibrating sensors chapter. This screen is also where the GPS information can be found, see GPS chapter below for more information about the GPS.

The sensor screens visibly allow you to view the value of sensors and provide calibration options for common sensors. For less common sensors you can use the generic sensor screens (Fig 10 and Fig 11). To toggle between the different sensor screens, if the sensor was assigned a graphic, tap on the sensor screen box on the Micro Pod (active area shown in Fig 4). The sensor screens toggle in a circle so you can always get back to the sensor screen you want to view. When you toggle back to the race or qualify screen and back to the sensor screen, the unit will remember which sensor you were viewing and come up displaying that sensors data. Below are examples of some common sensor screens and the generic sensor screens provided on the RLC Race Loggers.

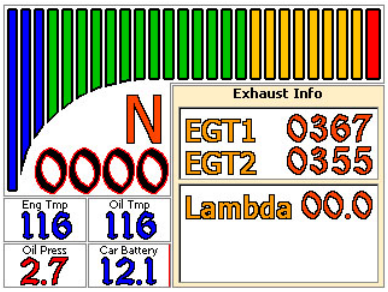

Figure 6 – EGT Sensor Screen

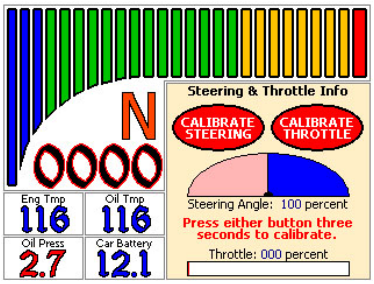

Figure 7 – Steering and Throttle Sensor Screen

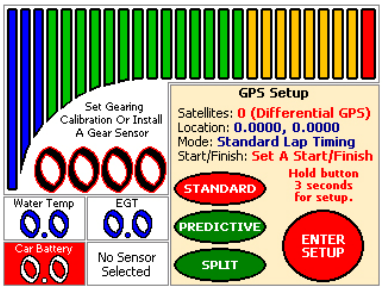

Figure 8 – GPS Set Up Screen

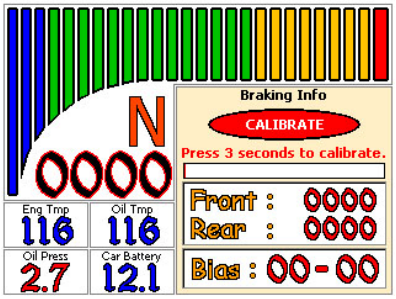

Figure 9 – Breaking Sensor Screen

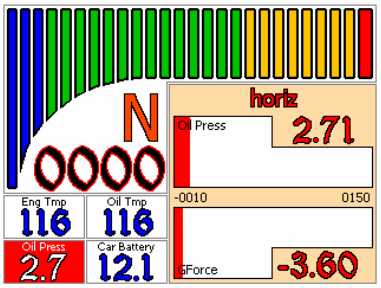

Figure 10 – Generic Sensor Screen

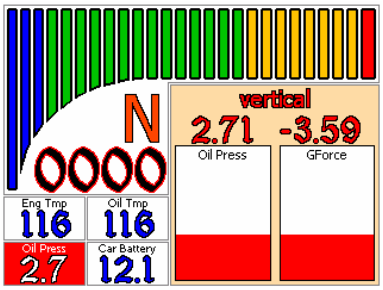

Figure 11 – Generic Sensor Screen

Main Menu Screen

The main menu screen (Fig 5) is the screen you use to set up your car and user preferences. This screen will mainly be used in the technical manual when you set up your car configuration. The race replay function is the only screen that you can access in the main menu without a USB device, such as the mouse, connected to the Micro Pod. The race replay screen is explained in a later chapter in this manual. To access the rest of the main menu screens you will have to plug in a USB device. We block the rest of the functions on the main menu so that you cannot alter your car set up by accident. While out at the track, the only function you will need to access is the

file manager which has all your logged session files in it. Simply plug in your USB memory stick to access the files, see the offloading race log files chapter below for directions on how to transfer your logged session files.

Warning Screens

Warning screens appear when preset warning levels have been crossed. These levels are user definable and are set during each sensor setup. Please see the technical manual on how to set the warning levels for each sensor. Two levels of warnings are set, an initial warning level and a final warning level. The initial warning level is the value at which you want to be alerted to a potential problem. When this value is reached it will blink the corresponding gauge red as seen in Figure 12. The final warning level is the value at which the car should be pitted so that you can investigate the problem. When this value is reached the entire screen will turn red (Fig 13) and requires the driver to acknowledge the warning by touching the touch screen in order to override it and return to the racing screen.

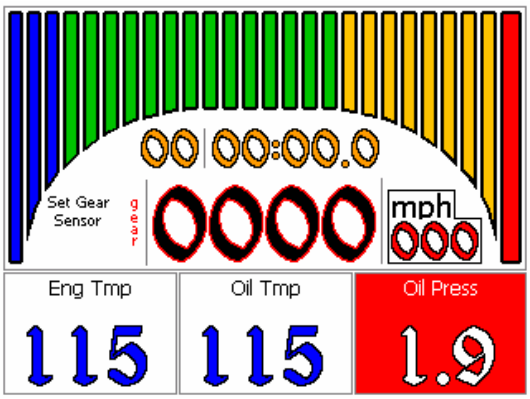

Figure 12 – Initial Warning

Figure 13 – Final Warning

Lap, Predictive, and Split Times

Lap times are displayed during the race and require no user intervention. They can be triggered either with a lap beacon or with GPS, we recommend GPS for the most accurate lap time. Lap, predictive, and split lap times need to be set up in the GPS screen. Please see the GPS chapter on how to set up the lap timers. Lap times, predictive and split times are flashed on screen and remain on screen for a set amount of time (Fig 14, 15, and 16). The amount of time a lap time stays on the screen is set by the user. The default time is 5 seconds, if you want to set a different amount of time the lap time is displayed, please see the technical manual. Below the lap time is a value that tells you if you were faster or slower than your fastest lap time. The predictive lap time displays the time difference between your best lap time and your current lap time at that particular spot on the track. The split lap time displays your time between the markers you set on the track and the time difference between your best time and your current time. Lap times, predictive, and split lap times will only pop up in the race screen and the qualify screen.

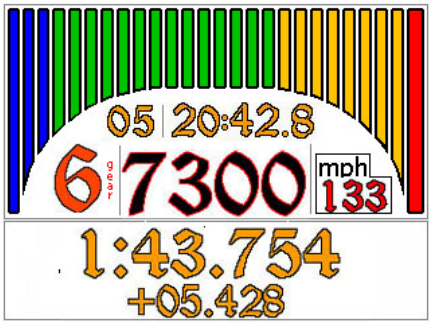

Figure 14 – Lap Timer

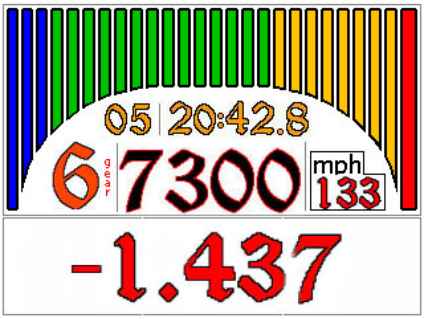

Figure 15 – Predictive Lap Timer

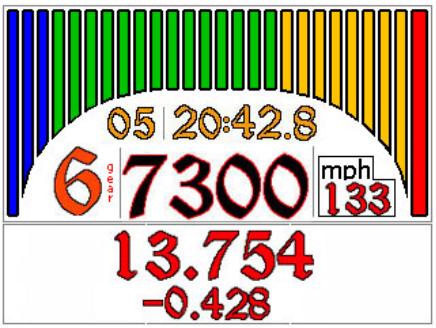

Figure 16 – Split Lap Timer

Stopwatch / Lap Counter

The stopwatch and lap counter are displayed on the race and qualify screen (Fig 17). The lap counter keeps track of what lap number you are on; it will increase every time you cross the start/finish line. Please see the setting the start/finish line section below on how to set the start/finish line. This feature allows you to see the lap number and time any section of a track independent of the system lap timer. You can use the stopwatch to know how long you have been on the track and how long until the end of a timed race. The stopwatch automatically starts when you reach logging speed.

Even though the start watch automatically starts when you start logging you can start the stop watch manually as well. To start the stopwatch on a Micro Pod, tap the stopwatch area. To stop the stopwatch, tap the stopwatch area. To reset the stopwatch, tap and hold the stopwatch area for 3 seconds.

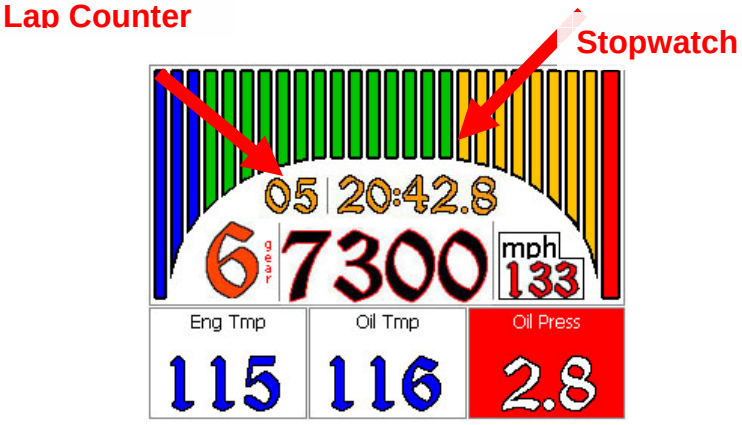

Figure 17 – Lap Counter and Stopwatch

Shift Lights

The shift lights are dual colored red/green lights and are used as rpm/gear shift indicators. The shift points & rpm levels are user programmable in the car setup menu which is covered in the technical manual. The LED display style (left-to-right, out-to-in) is user-defined in the display setup menu.

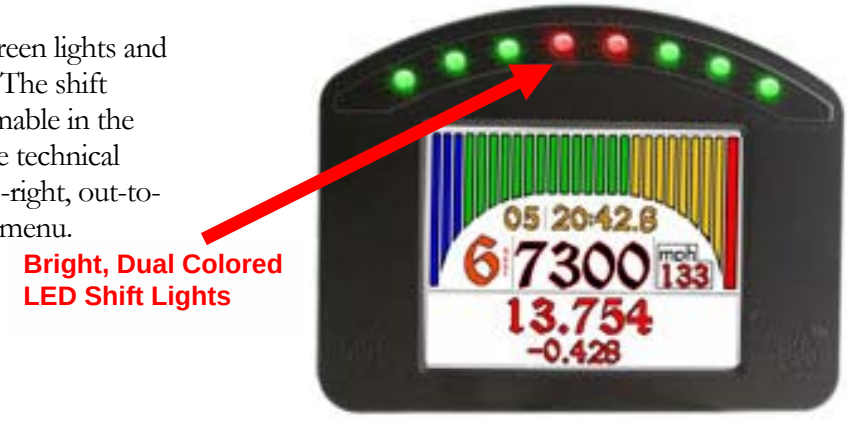

Figure 18 – Micro Pod With Shift Lights

User Preferences

LED Brightness

The shift light LEDs have 3 brightness levels, low, mid, and high, that the user can set. The Micro Pod units are shipped with factory set low, mid, and high brightness levels. If these levels are not sufficient for you please contact RLC. RLC may in the future give the user the ability to change these levels to your own preferred low, mid, and high levels.

When setting user preferences you must have a mouse plugged into the USB port so that you are able to fully access the main menu screen (Fig 5). To set the brightness of the unit, navigate to the screen setup screen. Tap on the top part of the LCD until the main menu screen appears and press the 'Screen Setup' button (Fig 19). To select the brightness level tap or click on the brightness level box to reduce or increase the brightness level. The brightness will scroll through low, mid, and high settings. Note: the Micro Pod Sport units can only dim the LEDs, the LCD is not dimmable, so this process does not apply to the Micro Pod Sport without LEDs. Both the LEDs and the LCD dim on the Micro Pod Lite units. Clicking the LED Scheme box will change the pattern of the LED's, according to RPM. Current options include left-to-right & out-to-in. Clicking the box will give you a preview of the currently selected pattern.

Touch Panel Calibration

Micro Pod units are calibrated in the factory, but users have the option to recalibrate if necessary. To calibrate your touch screen, simply tap the 'Touchscreen' button (Fig 19). Figure 20 will appear, follow the onscreen instructions and the touch screen will be calibrated and saved. When finished, press the 'Save Car' button (Fig 19). This procedure can be repeated until the touch screen response is acceptable, but this procedure should not have to be performed very often if at all.

Adjustable Brightness!

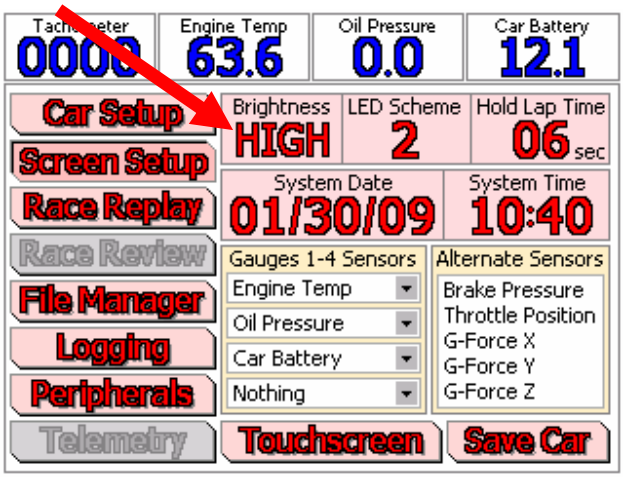

Figure 19 - Screen Setup Screen

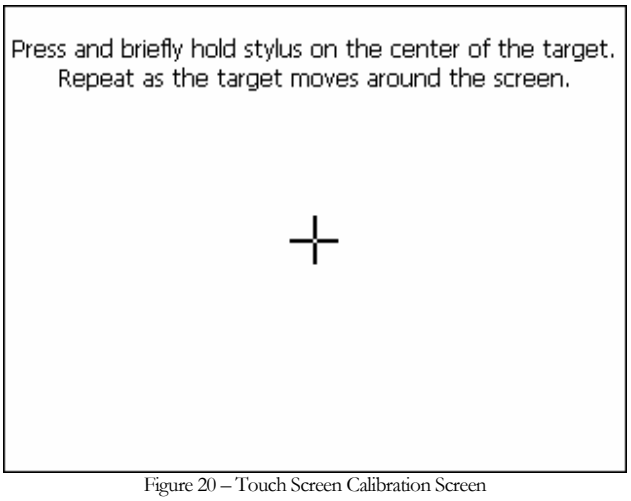

Figure 20 – Touch Screen Calibration Screen

Calibrating Sensors

The sensors in this section have to do with the set up of the car and are the sensors that are most affected when you make a change to your cars setup. Since these sensors need to be calibrated more regularly, we have made it easy to do so. In order to calibrate these sensors you will have to be in the car and the unit must have been correctly installed in the car along with the sensors. Whenever the car's setup is changed, i.e. the tires are changed, you must recalibrate the sensors that were effected by the change. The sensors must be recalibrated so that the R.L.C. race logger will take correct data. To calibrate all these sensors you will need to navigate to the appropriate sensor screen. To get to the sensor screens tap the top tachometer bar until you get to the sensor screen (Fig 4). Once the sensor screen has appeared click on the sensor box until the sensor you want to calibrate appears. Please refer to Chapter 1 Getting Around.

Throttle Calibration

To calibrate the throttle sensor navigate to the steering and throttle sensor screen (Fig 21). Press and hold the 'Calibrate Throttle' button and follow the on-screen instructions to start throttle calibration.

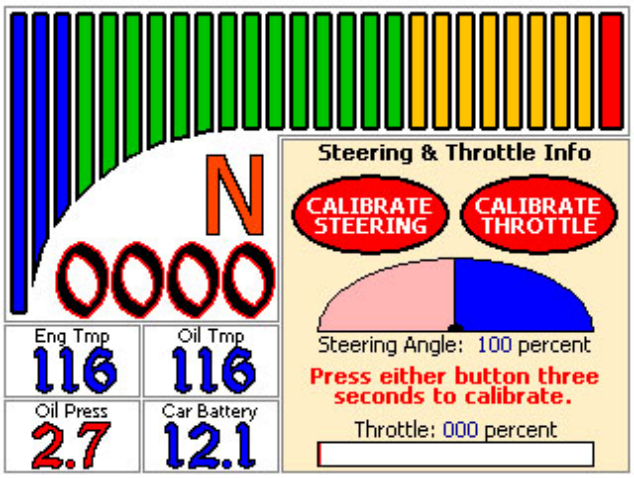

Figure 21 - Throttle and Steering Calibration Screen

Steering Calibration

To calibrate the steering sensor navigate to the steering and throttle sensor screen (Fig 21). Press and hold the 'Calibrate Steering' button and follow the on-screen instructions to start steering calibration.

Brake Calibration

To calibrate the brakes navigate to the brake sensor screen (Fig 22). Press and hold the 'Calibrate' button to start brake calibration

Follow the on-screen instructions to complete brake calibration.

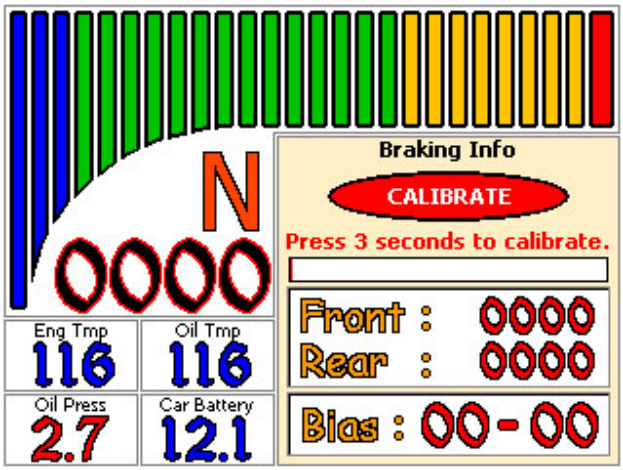

Figure 22 - Brake Calibration Sub-screen

Gear Position Calibration

The R.L.C. race loggers have a calibration routine that can figure out the different gears in the car. This is the only calibration routine that requires the car to be moving while calibrating. To calibrate the gear ratio, your car must have a tachometer sensor installed. No calibration is necessary if a gear position sensor is already installed. Start the calibration routine while the car is in the pit lane, press and hold the 'Set Gear' button (Fig 23). A window will appear that will have you choose between manual and automatic (Fig 24). We recommend that you choose the manual mode. Automatic mode should only be used if you have a sequential gear shift or if your gears are not close together. However, if you can reach the touchscreen you should use the manual mode because it will find your gears every time.

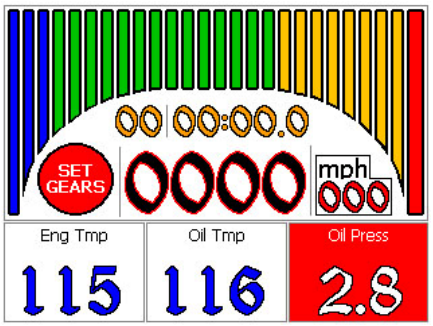

Figure 23 – Set Gears

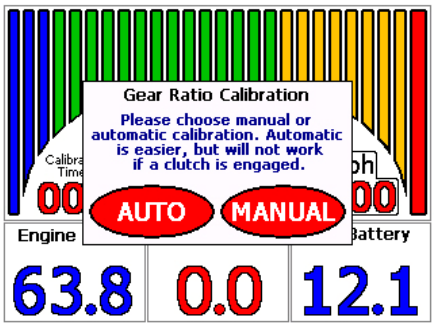

Figure 24 – Select Gear Ration Mode

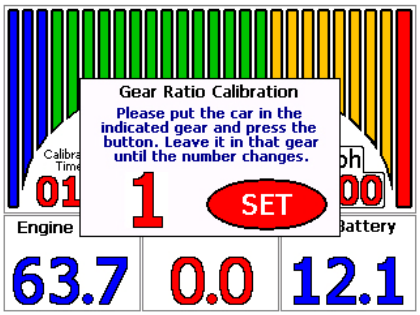

Figure 25 - Gear Position Calibration

When you click on the 'Manual' button another window with instructions will appear (Fig 25). This screen will tell you which gear you are going to record next. Only press the 'Set' button when you are actually in that gear being displayed. With the car in first gear, start driving around the track and press the 'Set' button on the screen to start recording the data for first gear. You need to stay in first gear for at least ten seconds, a count down will appear on the screen and then another window with the number 2 will appear on the screen. When you can, shift to second gear and perform the same procedure. You need to do this for every gear. When you have finished recording all your gears press the 'Save' button and you are done. Each gear that you record you need to stay in that gear for at least ten seconds, you can stay in the gear as long as you want or shift to other gears in the meantime. For example, if you are trying to record 5th gear and you won't be able to get into 5th gear until a half

way around the track, don't worry. Drive like normal, downshifts and up shifts, and when you get to the length of track where you can hit 5th gear, then press the 'Set' button. You can always leave the window in Fig. 25 displayed while you drive around the track and press the 'Set' button when you can get into the displayed gear.

When you click the 'Automatic' button (Fig 24) follow the on-screen instructions, you will need to drive the car around the track for approximately 2 minutes. Make sure to use all gears, through their full range for equal amounts of time. Avoid using the clutch and do not break tires loose during this calibration. When finished, the Micro Pod will display the number of gears it found and give you the option to save or cancel the calibration it found. If the information calculated was correct save the gear ratio information otherwise, cancel the ratio calibration and retry.

If you change your gear ratios you will have to go through this calibration again so that the unit can find the gears again. Simply follow the steps above, but instead of pressing and holding on the 'Set Gear' button, press and hold on the gear being displayed. Note: The Micro Pod unit allows the user to save different car configurations under different names. This means you can have different gear ratios saved under different names so all you have to do is load in a new car configuration so you don't have to go through the gear position calibration every time you change your gears. Please see the technical manual for more details about car configuration files.

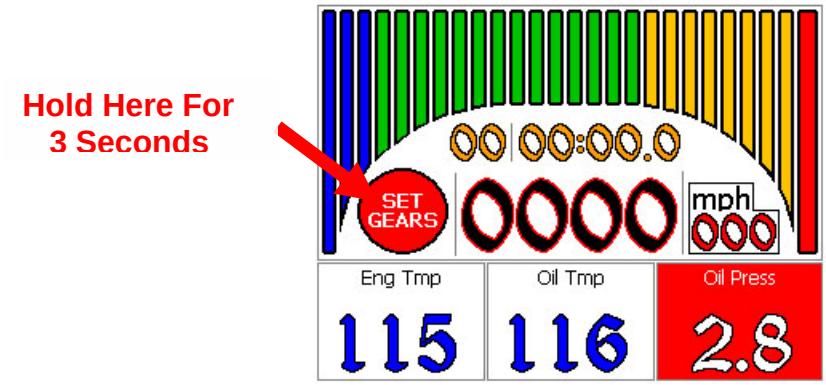

Figure 23 - Gear Position Calibration

GPS

GPS is included with all Micro Pod units, which allow you to get exact track maps, lap times, predictive times, and split times. Standard GPS units included with your Micro Pod are the 5 Hz, although both 10 Hz and 20 Hz models are available from R.L.C. For the most precise measurements we recommend the 20 Hz model.

If you would like to verify that the GPS is working and connected properly, navigate to the GPS screen (Fig 26). On the Micro Pod tap the tachometer bar until the sensor/calibration screen appears (Fig 4), then tap inside the sensor box until you get to the GPS screen (Fig 26). Refer to Chapter 1, Getting Around, for more exact instructions for navigating through the screens. The GPS data is displayed in this screen; the number of satellites the GPS is locked on to, signal quality, and the latitude and longitude of your location. The GPS unit will take a couple of minutes to connect to the satellites. Make sure you are outside when trying to verify GPS, it won't always work inside. If there is an error connecting it will indicate that there is no GPS connected.

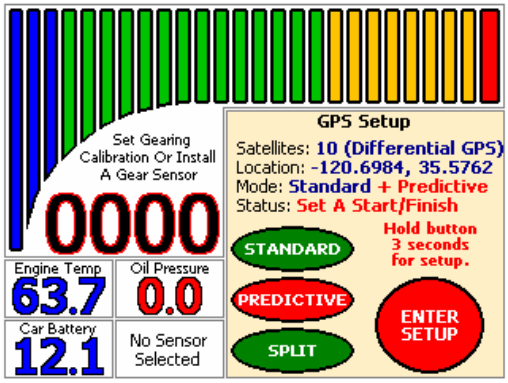

Figure 26- GPS Timing Setup Screen

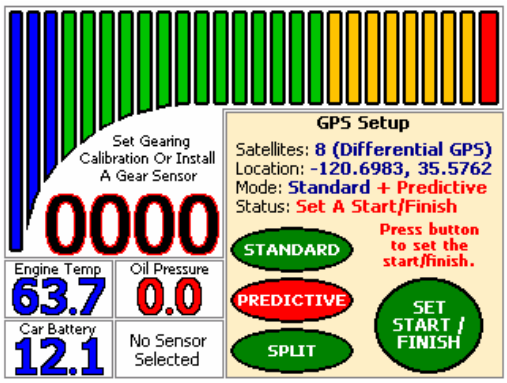

Figure 27 - GPS Screen to Setup Start/Finish Line

Setting the Start/Finish Line

A start/finish line must be set on your unit so the pop up lap timer, lap counter, and predictive lap timer works properly. Usually you set the start/finish line on your first lap around the track. Once the start/finish line has been set, your unit will remember it until you drive a different track and/or set a different start/finish line. This start/finish lap will also be recorded as your base lap for when the unit is in predictive mode. To read more about predictive lap timing, see the GPS predictive lap timer section below.

To set the start/finish line, navigate to the GPS set up screen (Fig 26). By default, the unit is in predictive mode, but you can set the start/finish in this mode. Hold the 'Enter Setup' button. Another screen will appear (Fig. 27) that allows you to set the start/finish line. When your car passes the spot on the track that you want to mark as the start/finish line press the 'Set Start/Finish' button. Make sure you drive a complete lap around the track so that your base lap for predictive lap timing will be established. Once the start/finish line has been set, the unit will automatically switch to the qualify screen (Fig 3).

Creating a GPS Track Map

GPS is the most accurate & precise way to map a track. Every lap that you take around the track is distinctive and unique. Unlike mapping a track with G-Force, just a single lap will render an accurate map based on your exact line you drove. G-Force requires that you make multiple laps and then the PC software will average your laps and create a track map based on those averages. Each lap will look exactly the same and the data can be off as much as 30 ft! With RLC, each lap will look different because each line you drive around the track is slightly different. The data that is recorded from each lap is accurate to within inches. R.L.C. does not average and compress your data to create a track map; instead our software creates a track map based on each individual lap. The Race Analyzer software creates a track map based on how much of the track you drove on (Fig 28). The left side of the track will be the leftmost line your car drove on the track and the right side will be the rightmost line your car drove. The narrower the track means that you drove close to the same line every time you drove that part of the track. Now when you analyze your data on the Race Analyzer software, each lap will appear within the track that was created by your car. The track map that was created is specific to the data for that particular session. Each session will render a different track map because your drive differently every time.

Figure 28 – Track Map

Exact Track Mapping

R.L.C. offers Exact Track mapping which is the most precise way to map a track. Exact Track allows you to see your lines within the width of the actual track. We do this by driving the right and left sides of the track so that you are able to get the exact widths everywhere along the track (Fig 29). When you load your race logs in our Race Analyzer software, your laps are shown within the width of the track. You can see the exact lines you drove everywhere on the track and you are able to find the fastest line. You only have to create a track once and you have the track forever. You can even check at R.L.C.'s website to see if the Exact Track map has already been made and download it.

Figure 29 – Exact Track Map

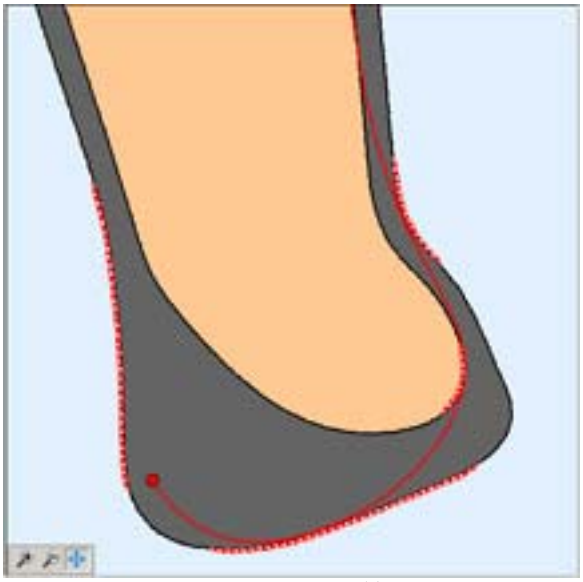

Figure 30 – Exact Track Map, Close Up

To create an Exact Track map, navigate to the GPS track mapping screen (Fig 31). Start with the left tires on the left side of the track and press and hold the 'Start' button. Another GPS track mapping screen will appear and it will display the distance traveled and the distance to the start (Fig 32). Slowly, at no faster than 30 mph, drive around the left side of the track. When you get back to the start line, switch to the other side of the track and drive the right side with your right tires on the edge of the track. The car must travel in the same direction for each lap. If for any reason you want to abort the track mapping press the 'Cancel' button. When you get back to the starting line once again, press the 'Stop & Save' button. Once finished, this created file can be imported into the RLC Race Analyzer software which will build the track map. Our Race Analyzer software also lets you zoom in on certain parts of the track, add rumble strips, flag stations, start/finish line, and other track features (Fig 29 and Fig 30).

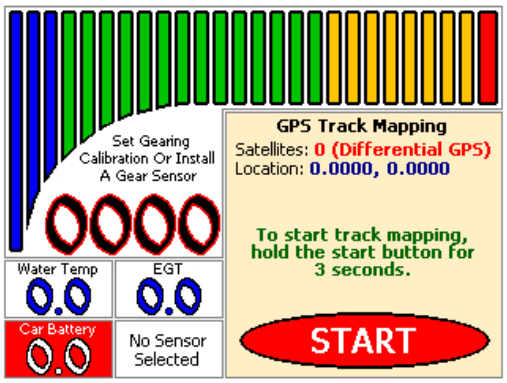

Figure 31 - GPS Track Mapping Screen

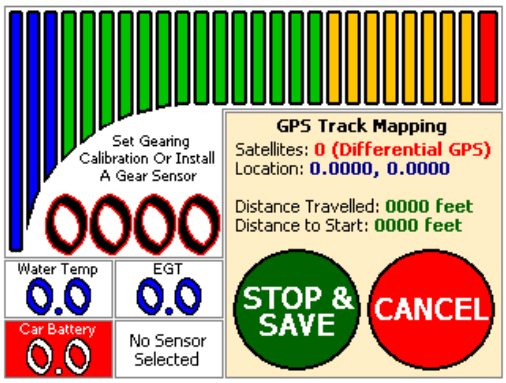

Figure 32 - GPS Track Mapping Screen

GPS Lap Timer

GPS can be used to measure lap times instead of a stationary beacon you have to place on the track. GPS is more exact and it would eliminate having to buy an expensive lap timer. The GPS lap timer is automatically set up once you set the start/finish line, which was covered in an above section. Now your lap time will pop up on your unit every time your car crosses the start/finish line (Fig 33).

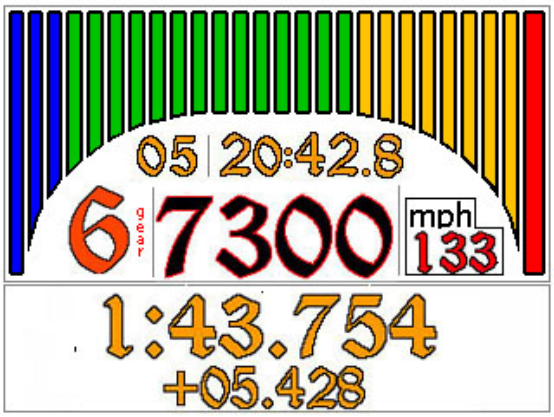

Figure 33– Lap Timer

GPS Predictive Lap Timer

Predictive lap timing is a great tool when you want to try new things on the track and need some instant feedback. When the race logger is in predictive mode, it will inform you of the time difference at the current location on the track between your current lap and your fastest lap (ever), so you know if things are helping or hurting (Fig 34).

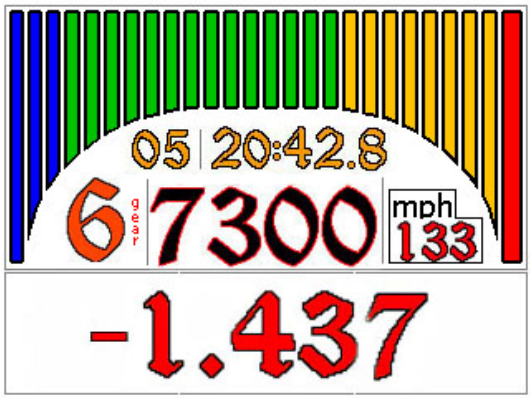

Figure 34 – Predictive Lap Time

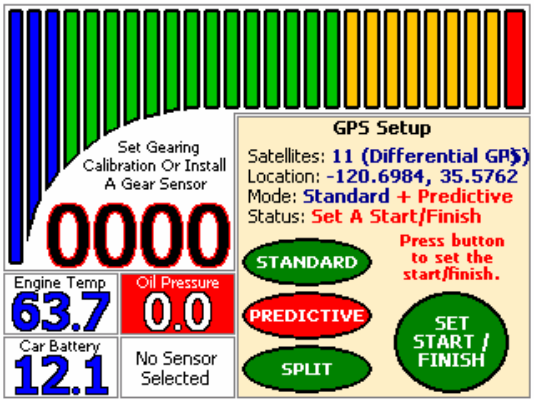

Figure 35 – Predictive Setup Screen

To set the predictive lap timer, navigate to the GPS set up screen (Fig 26). Tap the 'Predictive' button and then press and hold the 'Enter Setup' button. Another screen will appear (Fig 35) that will prompt you to set your start/finish line. If you already went through the steps to set up a start/finish line and made a complete lap, then you do not need to record a base lap. A base lap is needed so that the unit can set up the markers needed for predictive lap timing. You can exit out of this screen by tapping on the tachometer bar on the top of the screen. If you would like to record a new base lap simply press and hold the 'Enter Setup' button then press the 'Reset Times' button and drive a complete lap around the track. You can also establish a new base lap by setting a new start/finish line and driving a complete lap. The reason that you may wish to record a new base lap is if the weather conditions change and you want to reset your fastest lap. Your fastest lap is what your predictive lap times are based off of so it makes sense to have a fastest lap for the current weather conditions. Comparing laps from a sunny day to a rainy day doesn't make sense.

GPS Split Lap Timer

The split lap timing feature on the RLC race loggers lets you divide up the track to work on specific sections to get your lap times down. By setting markers, you can section off the parts of the track you want to work on. You can set up to four markers on the track to make either two different sections or three consecutive sections. When the unit is in split mode it will display the time it took to get through the markers you set and the difference between your current time and your best time (Fig 36).

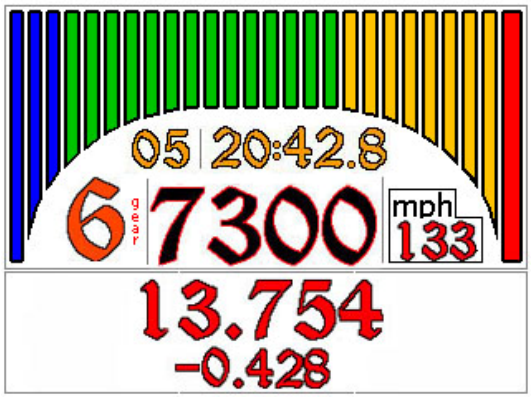

Figure 36 – Split Lap Time

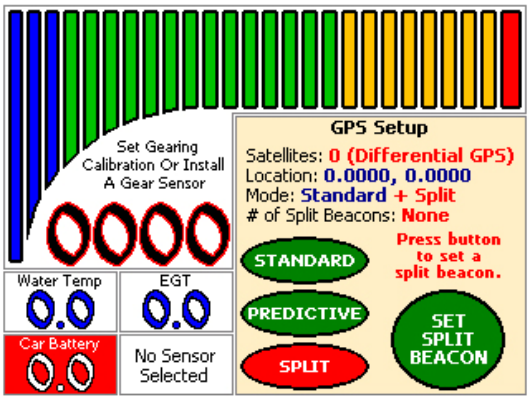

Figure 37 – Split Setup Screen

To set the split lap timer, navigate to the GPS set up screen (Fig 26). Tap the 'Split' button then press and hold the 'Enter Setup' button. Another screen will appear (Fig 37) that will allow you to set a split beacon. Press the 'Set Split Beacon' once before and once after the section of track that you want to work on.

GPS Connection Time

When connecting the GPS for the first time it could take upwards of an hour to lock onto satellites and start transmitting data, due to a significant change of position. When making a connection for the first time make sure the antenna is in clear view of the sky and the cord is completely uncoiled. After the GPS has established a connection for the first time, connecting to satellites can take as little as 5 second to a maximum of 1 minute.

To view how many satellites your GPS unit is connected to, navigate to the GPS setup screen on the Micro Pod (Fig 35). This screen will show you how many satellites you are connected to and if you are connected to the differential satellite. When the GPS initially connects, it will only be connected to maybe 4 satellites. As the GPS units stays on it will connect to more satellites automatically.

Race Replay

Reviewing any logged session on your unit is easy to do with R.L.C.'s exclusive race replay function. It is useful for quick, trackside replays when no laptop is available. The replay screen has a familiar VCR type control panel that lets you playback, stop, step backwards, step forwards, and pause the replay session. While the unit is in replay you can scroll through the different race screens and sensor screens so that you can view the data as it happened on the track.

To replay a logged session navigate to the race replay screen by simply tapping on the top tachometer bar unit the race replay screen appears (Fig 38). You can always connect the mouse that was provided in your kit to make selecting certain buttons easier but everything can be done without a mouse.

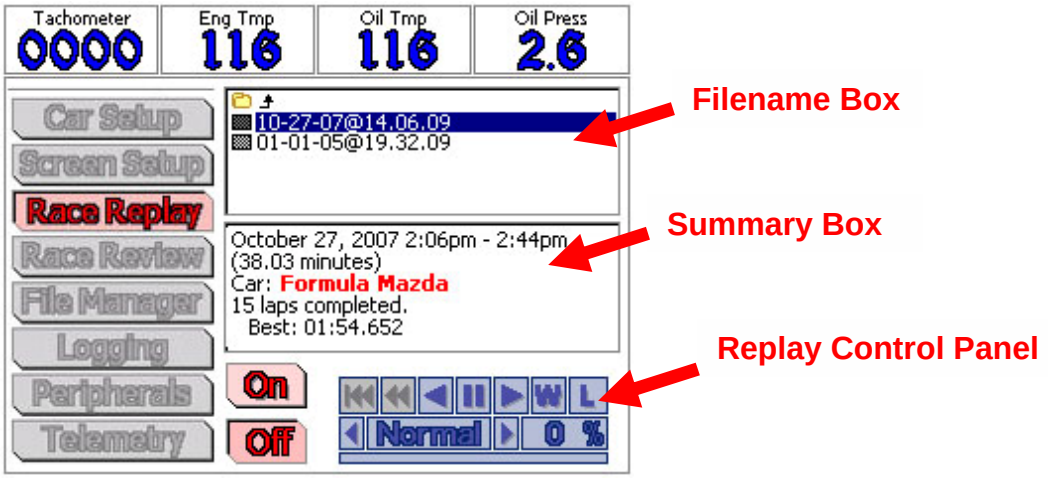

Figure 38 - Race Replay Screen

The race replay screen (Fig 38) has a filename box, a summary box, and race replay controls. The filename box contains all of the logged files that are available for replay. The summary box gives you the date, time elapsed, car name, laps completed, and best lap time for the highlighted session. The race replay control panel controls how fast or slow the replay plays; how the replay control panel works is described in the section below.

Replaying a Race

Select which file you would like to replay by tapping on the file. Once you have selected the desired file tap the 'On' button. To start playback on the Micro Pod you need to tap on the top sensor bar which will bring up the playback screen (Fig 39) and then press the play button.

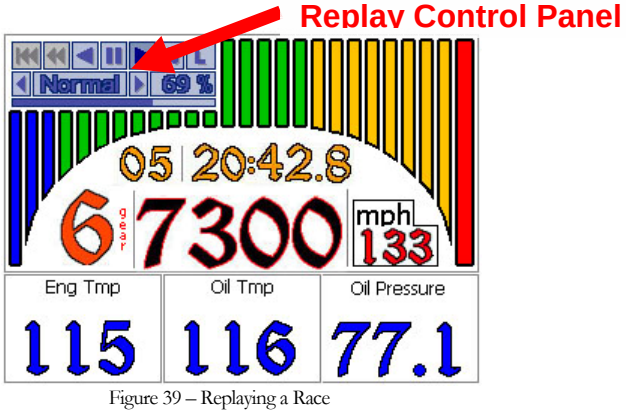

Figure 39 – Replaying a Race

While a race is being replayed it can be controlled through the control panel on the top left of the screen(Fig 39) to fast forward, pause, or rewind the race. Simply tap on the action you want. While the unit is in replay you can scroll through the different race screens and sensor screens by tapping on the tachometer bar or in the sensor box. Please refer to the getting around section on how to navigate through these screens.

The race replay control panel also has a 'W' or warning button and an 'L' or lap timer button. When the 'W' or warning button is activated the warning screen will appear (Fig 40) and when the 'L' or lap timer button is activated the lap timer will flash on screen (Fig 41). To view these screens, tap on the appropriate button.

Figure 40 –Warning Screen

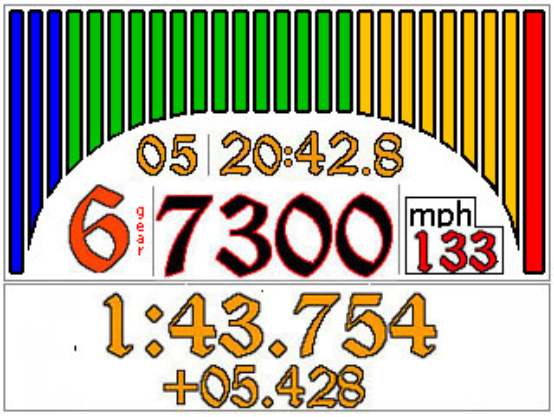

Figure 41 – Lap Timer

When you want to stop the replay, navigate back to the race replay screen (Fig 38) by tapping on the tachometer bar. Once in the race replay screen tap the 'Off' button.

Replay Information Screen

The replay information screen is a sensor screen that is only available during race replay. It is a brief summary of sensors, speed, and time that is useful during replay. Read the getting around section on how to navigate to the sensor screen.

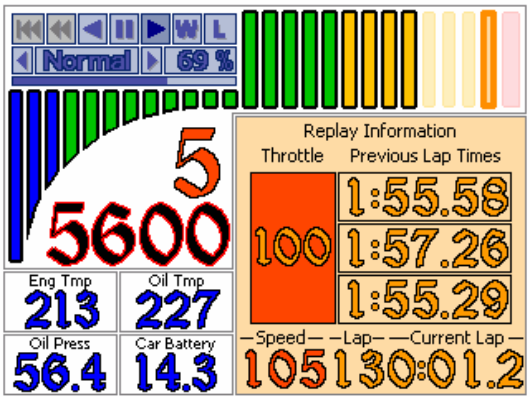

Figure 42 – Replay Info Screen

Race Log Files

Each time you go out on the track the race logger creates a logged file session. These logged sessions can either be played back on your unit (Ch 6) or downloaded to your PC to analyze the data with the RLC Race Analyzer. To transfer the logged session files from your Micro to a PC you only need to connect a USB memory stick, there are no extra cables to attach just the USB stick. Make sure the car is not running before you upload, copy, or delete files from the Micro Pod.

Uploading Race Log Files

To transfer a logged session from Micro Pod to a PC you will need the USB memory stick that was included in your kit but also available at your local office store. Insert the USB memory stick into the connector on the harness. The race logger will scan the USB stick for logged files and compare them to the log files on the race logger itself. If the race logger contains files that the USB stick does not it will display the number of files found and a pop up window will prompt the user to copy all files, copy and delete files, or cancel (Fig 43). The copy only option will scan the USB stick and copy all logged session files not already on the USB stick. The copy and delete option will copy all new logged session files over to the USB stick and erase the file from the race logger itself. Choosing the option to copy and delete is a much faster way to offload your logged session files. The cancel option will close this pop up window. You would choose this option if you want to manually transfer files, see below. Select an option by pressing on the appropriate button. With the logged sessions now on your USB stick, you can load them into the RLC Race Analyzer software and study your data. You can also leave the USB stick plugged into the harness while you are out on the track. With the USB stick plugged in, the logged session files will automatically download to the USB stick when the session is done.

Figure 43– USB Stick Plugged In

If you would like to copy the files over manually you will have to connect the USB hub so that you can connect both the mouse and the USB memory stick. Navigate to the File Manager screen by tapping on the top tachometer bar until the main menu screen appears (Fig 7) then click the 'File Manager' button. With a mouse or stylus select the 'Log Files – Transfer To/From USB Stick' option from the dropdown menu (Fig 44). Select the log file you want to transfer to the USB memory stick from the 'Local Logs' section. When the log file is highlighted, click the button. The file will transfer from the race logger to the USB memory stick. Now you

can take that file and import it into the RLC Race Analyzer. If you want to copy over an entire folder and its contents you can use .

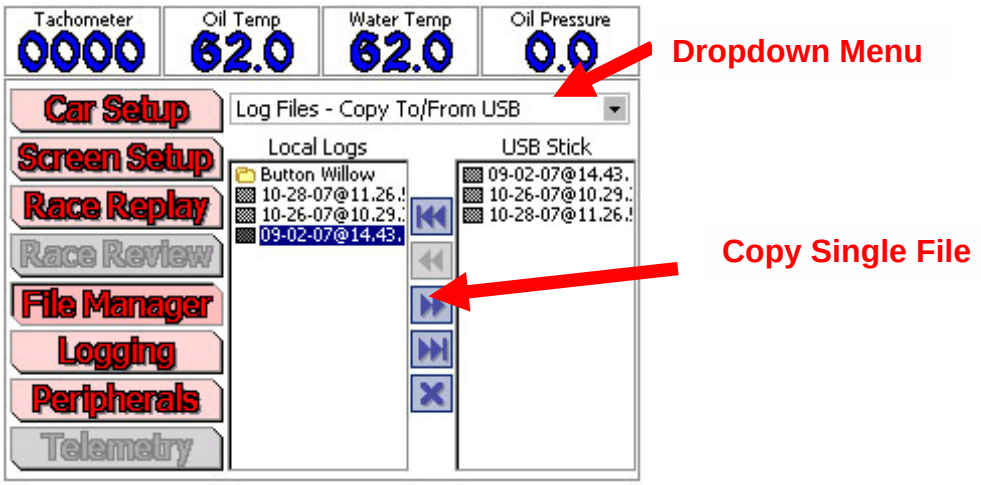

Figure 44 - File Manager Screen

Copying Log Files From a USB Stick to a Race Logger

Log files can also be copied from a USB stick to a Micro Pod unit. Using the same steps above select a file that is already on a USB stick and click the or buttons.

Deleting Log Files

To delete a file from either a USB stick or from the data logger, select the file to be deleted and press the button. There is no undo for this operation so a popup box will prompt the user for a final confirmation (Fig 45).

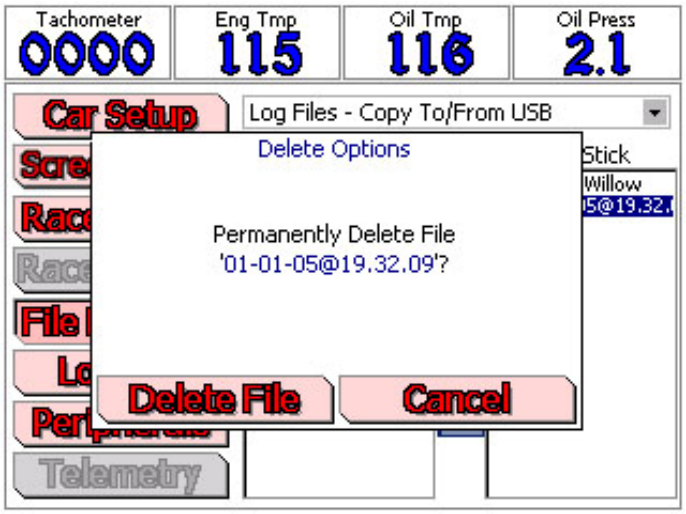

Figure 45 – Deleting A File

Options

RLC offers a couple of different options that are available to add to your race logger. Synchronized video and telemetry add easily to your race logger by just plugging them into the wiring harness. All connectors are already on the harness so there is nothing for the user to do but plug in the option.

Synchronized Video

RLC worked with Chase Cam to offer truly synchronized video. The Micro Pod unit plugs directly into the Chase Cam camera system with a serial cable, which is already on the wiring harness, and the data being taken by the race logger is embedded in the video stream. Now when you play the logged session file on the RLC Race Analyzer software the data is directly linked to the video. There is no pressing play at the same time or overlaying the files, this is truly synchronized video. You can click on any section of the track, the video and the data will both jump to that exact position selected. You are also able to play the video on any device that will play standard MPEG files so you don't have to have our analyzing software to play your video.

The race logger also controls the camera; it turns it on and off so you never miss recording a session. The camera is set to turn on when you start logging data and to turn off when you stop logging. This way you will never waste precious memory when you are idling in the pits. Please see the technical manual on how to set the start logging criteria.

Telemetry

Telemetry has never been so easy to add to a race logger. Simply plug our modem into the Ethernet port on the harness and a modem into the Ethernet port of your laptop and you are instantly transmitting data. RLC uses a small 900 MHz modem to plug into the race logger and laptop which has a 25 mile range. Your crew can stand anywhere on the track and monitory the car's sensors or instantly watch your lap lines. Telemetry is not available on the Micro Pod Lite models.

Backup and Restore

The Micro Pod units allow the user to fully backup and restore a car's configuration, sensor files, or the complete system. It is recommended to back up the entire unit once you have completely set it up. We also recommend that you backup your unit anytime you make significant changes to the car. Once you have made a backup save it on your PC so that if anything were to happen to your unit you can restore all of its configurations and sensors without having to redo everything. You can also save different configurations of your car under different names so you don't have to re-calibrate different sensors. For example, you may have different setups for your car for different tracks, usually different gear ratios. You could make a back up of your car for each one of these tracks so you just have to load the car configuration for that track and not have to re-calibrate sensors or gear ratios. This procedure is also covered in more detail in the technical manual.

When backing up or restoring files you will need the plug in the USB hub that was included in your kit so that you can plug in a mouse, USB memory stick, and keyboard. With a USB device plugged in you are able to fully access the main menu screen (Fig 7) which allows you to access the file manager screen. Navigate to the File Manager screen by tapping on the top tachometer bar until the main menu screen appears then tap the 'File Manager' button. Select which function you would like to perform from the drop down menu.

Complete System Backup & Restore

To make a full system backup, select 'Complete System – Backup & Restore' from the drop down list (Fig 46). Enter a name for your back up and click the 'Backup' button. Now a complete system backup has been created on the USB memory stick. We recommend that you keep a copy of this on your PC.

To restore a complete configuration insert the USB memory stick with the backup files and select the file from the USB stick area and click the 'Restore' button. WARNING: the entire car is overwritten during a restore process.

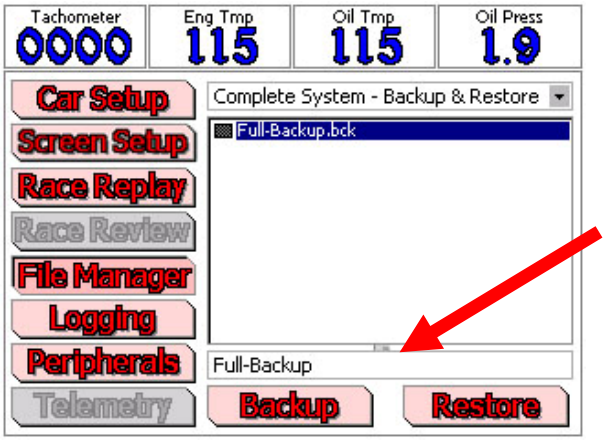

Figure 46 - Full System Backup

Appendix A

Operation and Description of the Switches

The Micro Pod Extreme race loggers use two switches located on the top of the unit for navigation instead of a touch screen like the Micro Pod Lite and Sport units. The switches allow the user to navigate the unit, toggle between different screens, and select files to replay. The Extreme unit has the same functionality and screens as the Micro Pod units. The switches are just as easy to use to navigate the Extreme unit as the touch screen once you familiarize yourself with them. It is important to note that you can not hurt the unit with the switches. This appendix was written to show you how to navigate the Extreme units with the switches without a mouse plugged in.

Switch-1 is used to select files to replay or to start and stop the stopwatch. While in either the race screen or in the qualify screen, clicking switch-1 to the left will start the stopwatch and clicking to the right will stop the stopwatch. While in the race replay screen, clicking switch-1 to the left will let you select which log file you would like to replay and clicking switch-1 to the right starts the file in replay. While the file is in replay you can speed up or slow down the file by clicking switch-1 to the right or left. Please read Ch 5 Race Replay for more information about the race replay function on the Micro Pods.

Switch-2 is the switch you will use to alternate between screens and is the switch you will use the most. Clicking switch-2 to the right will toggle between the race screen, qualify screen, sensor screens, and main menu screen. Clicking switch-2 to the left while in the sensor screen will toggle between the different sensor screens. Clicking switch-2 to the left while in the main menu screen will toggle between the different setup screens available in the main menu if a USB device is plugged into the harness. For a better description of the race and sensor screens please see the Getting Around section in chapter 1.

Switch-1 and Switch-2 are also used in the various sensor screens to either calibrate sensors, set a start/finish line, or put the unit in predictive or split lap timing mode. There will be directions on-screen to let you know which switch to click which way. Please see chapter 3 for more information about calibrating sensors and chapter 4 for more information about setting the start/finish line and putting the unit in predictive or split lap timing mode.

Fig 49 – Micro Pod Extreme